

REMARKS

In the above-identified Office Action independent Claim 30 was rejected as being obvious in view of a hypothetical combination of the newly cited Parulski article when combined with the previously cited Rashkovskiy patent. By this response, however, Claim 30 has been amended in a manner which is believed sufficient to render that claim allowable over the reference.

In this regard, Claims 30-34 are the only claims now pending in the application. Those claims, as expressed in the sole independent Claim 30, relate to a color image pickup device, formed on a single semiconductor chip. As previously presented, Claim 30 required a pickup element having a two-dimensional array of photodetectors each having its own color filter, a reading circuit for randomly accessing and reading the photodetectors, wherein image data is read out from basic block units formed by at least a two-by-two array of photodetectors, and a block storage circuit for storing the read data. Significantly, the stored data is taken from a target block unit of detectors, and from neighboring block units. Additionally, Claim 30 required an interpolation circuit to interpolate an output for each of the target photodetectors. As amended, Claim 30 now includes the requirements of previous Claims 35 and 36, and requires that the block storage circuit receives analog image data sent in parallel from the reading circuit (see 307 in Fig. 11). Claim 30 also now requires that the signal processing circuit receives the image data outputted from an interpolation circuit and that the image data is an analog signal until processing by a signal processing circuit.

Referring now to the cited prior art, Applicants note that the Parulski article discloses, in Fig. 5 and its related description, a replacement of a signal with an adjacent signal of the same color. However, in such case, since the signal from the sensors is read out successively, a sample hold circuit is necessary. Accordingly, the circuit structure of Parulski is made undesirably complicated.

According to the present invention, as expressed in amended Claim 30, since the signal is read out in parallel for each basic block, and is stored into a block storage circuit, such a sample hold circuit is unnecessary. Accordingly, the circuit structure is simplified, thereby simplifying its manufacturing requirements. This is a significant advantage of the present invention. Moreover, the block storage circuit, the interpolation circuit, and the signal processing circuit are formed by a one-chip form, and manufactured in a process common to the sensor unit as an analog circuit. Furthermore, the analog signal is used therein until outputting from the signal processing circuit, so that the processing requirements are simplified. Also, an AD converter is unnecessary, thereby reducing the size requirements for the device.

Significantly, Applicants note that the Parulski reference is silent as to these various features of Claim 30, and the Rashkovskiy patent also fails to disclose the above-characterized structure.

The cited Shaw reference discloses a sensor array, a timing control circuit, and a support circuit. However, according to Shaw, ADC and DAC are also integrated in the chip so that the signal is converted into a digital signal therein. Accordingly, the

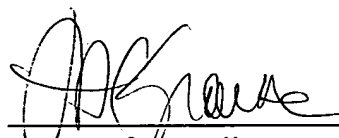
structure disclosed therein would be an analog-digital hybrid IC structure, wherein the production cost would be made larger, and the structure would be made undesirably larger.

In summary, none of the cited references discloses or suggests a structure of reading in parallel the image data from the basic block in the sensor to make the whole structure readily producible on a single chip in the form of the present invention, nor do those references disclose the use of the analog signal therein until the signal is provided as an output from the signal processing circuit thereby simplifying the production process, and avoiding the necessity of an AD converter, thereby giving rise to a compact structure.

For these reasons it is believed that the application is now allowable.

Applicants' undersigned attorney may be reached in our New York Office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address listed below.

Respectfully submitted,



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